

The Manistee Watershed Initiative

(A) Characterizing the watershed and overall planning effort

(1) A description of the watershed's biological, physical and relevant social/cultural characteristics.

The Big Manistee watershed is composed of roughly 1780 square miles in northwest Lower Michigan and contains parts of twelve counties (Figure 1). The watershed is generally split into two distinct portions, upper and lower. The upper watershed is generally considered that portion above the two hydroelectric dams operating in the watershed, which currently block fish passage. The fishery above those dams is composed of walleye, pike, and warm water species nearer the dams, and brook, brown, and rainbow trout farther upstream. Below the lower dam (Tippy Dam), the river is characterized by its salmon and steelhead fishery, with local and migratory brown trout also present.

The Michigan Department of Natural Resources Fisheries Division prepared a comprehensive River Assessment in 1998, which breaks the watershed into eight distinct segments in terms of the fishery and habitat conditions (Rozich, 1998). The land use in the watershed is roughly 3.3% urban and suburban, 39% agricultural, 1.7% rangeland, 12.2% coniferous forest, 29.3% deciduous forest, 12.8% wetland, and 1.7% lakes and streams. Very little of the agricultural land is cultivated cropland, with the majority being pasture, orchard, and Christmas tree plantations (Rozich 1998).

The Little River Band of Ottawa Indians (LRBOI) reservation is surrounded by the Manistee River Watershed. After a 120-year struggle, the Little River Ottawa's status as a federally recognized Tribe was reaffirmed when President Clinton signed into law the Little Traverse Bay Bands of Odawa and the Little River Band of Ottawa Indians Act, P.L. 103-324, 25 U.S.C., 1300k et seq., on September 21, 1994.

Since that time, as a federally recognized Tribe, the Little River Ottawa have been actively engaged in multidimensional Tribal revitalization efforts. Also, since its reaffirmation, the Tribe has experienced a period of very rapid growth. Amid this overall growth and revitalization of the Tribe are the efforts and contributions of our Natural Resources Conservation Department.

The Tribe utilizes numerous resources that the surrounding lands and water bodies provide. There are various seasonal fisheries that include walleye, steelhead, bass, pike, sucker and salmon runs. The river area is home to bald eagles and lake sturgeon, which are culturally significant to the Little River Band members. There is trapping of furbearers and turtles along the riparian corridors. The riparian and wetland areas also provide numerous herbal plants of cultural significance. Basket weaving is a craft that utilizes some of the wetland plants as well. In the river corridor there are many hunting activities that the water resource may affect. Waterfowl are directly impacted by the quality of the water resource. The area is also heavily used for recreational purposes, including, birding, hiking, camping, and boating. There are many uses of the river that the Tribe wishes to maintain and improve.

Historically, the Manistee River was a grayling stream. Also abundant were whitefish and lake sturgeon, all of which are either rare, or in the case of grayling, gone entirely.

(2) **An identification of problems or threats facing the watershed.**

The primary problem in trying to manage the Manistee River system is the presence of excessive sediment. These sediments are largely the result of the logging era, as the entire watershed was logged near the turn of the century. Sediment adversely affects fish reproduction, alters channel morphology, and precludes aquatic invertebrates. Soils in the watershed are largely comprised of sand, and the loss of upland vegetation from intense logging caused extreme erosion and resulting sedimentation. To compound this problem, many of the high

stream banks along the Manistee and Pine Rivers (the Pine is the largest tributary) were used as rollways to transport logs to market. These banks were cleared and many of them still remain with little or no vegetation and continue to contribute sand to the system.

In addition to sedimentation, logging resulted in the loss of existing large woody debris present in the river system. Historic surveyors noted huge natural logjams that were removed to expedite the transport of logs to market. Jams that provided habitat and cover for macroinvertebrates and fish were dynamited out of the stream, and the subsequent construction of hydroelectric dams has prevented recruitment of additional large woody debris. The combined effect of sediment loading and loss of large woody debris has meant a decline in the river's ability to provide naturally reproduced fish, and an increased need for hatchery sport-fish. The native fish (ie. sturgeon, burbot, walleye), which are not currently supplemented by hatcheries, require improved conditions for assurance of sustainability.

The lake sturgeon, a Threatened Species and one of the most unique and imperiled species in the Manistee River Watershed, is one of a few expected remnant populations on the eastern shoreline of Lake Michigan. The LRBOI has watched the once abundant lake sturgeon, a species of cultural importance, almost become extirpated from the Manistee River because of mismanagement and habitat destruction. It has been identified that a primary impediment to sturgeon rehabilitation is the loss of spawning habitat due to dams (blocking migrational routes) and destruction of suitable spawning substrate by excessive sedimentation. This past spring the Tribe documented the first natural reproduction of lake sturgeon in the Manistee River and have since received grant funding from the Great Lakes Fishery Trust to continue monitoring and evaluating the early-life history of lake sturgeon.

(3) A comprehensive description of the watershed plan.

Currently, a watershed management plan for the Manistee River Watershed is in place and approved by Michigan's Department of Environmental Quality. The plan identifies sediment as the leading water quality concern within the watershed. Erosion from streambanks and poorly designed road stream crossings is the primary source of erosion in the watershed. These problem sites are identified in resource inventories prepared by the Conservation Resource Alliance (CRA). CRA has inventoried over 450 road crossings within the watershed, as well as the eroding streambanks on the lower main stream and the two largest tributaries, the Pine River and Bear Creek. These inventories are part of the watershed plan, and allow watershed restoration efforts to focus on the worst sites first, and work in an upstream to downstream direction, benefiting the largest sections of stream possible with limited funding.

Short-term goals for the Manistee River watershed include sediment reduction through bank stabilization and road crossing repairs. Using the inventories to prioritize sites, preventing sediment delivery from its sources will be the first step in continued management.

The long-term goals for the Manistee watershed include sediment removal (sand traps), introduction of large woody debris, managing growth and development through education of landowners, and removal of some of the 63 dams within the watershed. Sediment reduction programs have begun with section 319 funds granted to CRA, with which several road crossings and streambanks have been repaired. CRA currently administers a grant through Michigan's Clean Michigan Initiative that focuses on similar erosion sites on the Big Manistee, Pine River, and Bear Creek. Up to 20 problem sites will be addressed with this funding. Additional efforts toward restoring lost woody debris are under way as well. Over 500 whole trees have been added to the river by helicopter over the past three years in an effort to replace lost fish habitat on National Forest lands. Additional funding to continue these efforts is being sought.

The Manistee River Watershed is a highly used recreational river. This Watershed Initiative would allow the concerned parties to take a proactive approach in the management of the watershed. The projects will promote responsible use of the river and help maintain the integrity of the system. The proposed projects will eliminate primary sources of sediment that are entering the stream and restore important habitat features of the river.

(B) Description of Proposed Projects

(1) A description of the relationship of the projects to the watershed plan and goals.

This is explained in Section (A) subsection (3) above.

(2) A detailed description of the proposed projects for EPA funding, including timelines, costs estimates and milestones.

Road – Stream Crossings Project

Road- Stream crossings are identified in the watershed management plan as priority sources of erosion where sediment currently degrades the water quality and habitat of the system. Funding provided under this grant would allow the LRBOI and CRA to work with the local watershed restoration committees to prioritize and address four additional streambank erosion sites, and improve up to four road crossings over three years. Four road crossings at an average cost of \$70,000 each would be cost shared at a 60/40 split, with local funding making up 40% of the total project cost for a total of \$168,000 in grant funding. Spring, summer, and fall would be used for construction, with CRA coordinating all steps of the completion process. Road crossing projects would focus on water quality improvements and be cost-shared by the local county road commissions. Projects undertaken with EPA funding would compliment previous 319 projects funded by EPA and build upon past successes.

This project would be monitored by LRBOI Conservation Department. Monitoring would include a habitat inventory, substrate classification, macroinvertebrate survey, and a fish

assessment. This information would be used in an overall IBI to determine the effectiveness of the restoration.

Stream Bank Stabilization Project

Another area of sediment loading to the system to be addressed will be unstable streambanks. LRBOI, CRA, and the local watershed restoration committees will work together to determine four streambanks to be stabilized. Over the three year duration of the grant, four streambanks at an average cost of \$30,000 each would be stabilized for a total of \$120,000 in grant funds. All four projects would be completed in a three-year time frame, with winter months used for engineering, site planning, and permitting. Spring, summer, and fall would be used for construction, with CRA coordinating all steps of the completion process. These projects will also compliment previous 319 projects funded by EPA and build upon past successes. This improvement will be monitored by LRBOI Conservation Department. Monitoring will include a habitat inventory, substrate classification, macroinvertebrate survey, and a fish assessment. This information will be used in an overall IBI to determine the effectiveness of the restoration.

Access Improvements Project

Because the Manistee River is such a heavily used recreational river, another source of sediment is user traffic. Many banks are severely eroded due to trails down to the rivers edge for access. These trails will be identified and steps will be put into place to minimize erosion. Up to five sites will be completed over the three-year time frame, at a total cost of \$50,000. Sites will be evaluated by monitoring re-vegetation, bank stabilization and aesthetic characteristics.

Sturgeon Spawning Site Reclamation Project

A lake sturgeon spawning site reclamation project will be undertaken to address poor recruitment of lake sturgeon in the lower Manistee River below Tippy Dam. This project will increase the limited amount of existing suitable spawning habitat. A site feasibility assessment will be conducted to determine suitable location. Boulders, cobble, and large woody debris will

be added to produce channel morphology and habitat appropriate for spawning lake sturgeon. The project cost is estimated at \$70,000. The Tribe has collected baseline data of sturgeon recruitment and recently received a grant from the Great Lakes Fishery Trust to continue monitoring sturgeon recruitment during 2003-2004. These activities would allow for comprehensive monitoring on the success of reclaimed spawning sites.

(3) Monitoring and evaluation component.

The Tribe currently has a baseline water quality monitoring program funded partially by EPA Clean Water Act section 106 funds. The LRBOI will utilize this information on habitat, macroinvertebrate and water chemistry combined with fisheries information to produce a complete monitoring plan for all rehabilitation sites. Baseline data will be used to monitor the overall watershed effect. Localized intensive study areas will be designed to monitor instantaneous short-term effects of restoration. The Tribe will develop, test, and implement a watershed-wide IBI to be used during and after proposed funding schedule. This information will supplement current water quality monitoring procedures.

(4) Description of how the projects complement or are consistent with other EPA, federal, and/or state programs or mandates.

The proposed projects are consistent with the State of Michigan Department of Environmental Quality approved watershed management plan for the Manistee watershed, as well as EPA approved grant (319 and 106) program mandates.

(5) Person or entity who will be responsible for coordinating the proposed projects.

The Tribe will serve as the fiscal agent in the administration of the proposed grant, and the Tribe's Natural Resources Conservation Department will coordinate and monitor all project activities. The Tribe will work in collaboration with the Conservation Resource Alliance to implement identified projects.

(c) Watershed Project Management and Stakeholder Involvement

(1) Identification, qualifications, and past experience of plan's leader, staff, and other active public/private partners expected to participate in the implementation of the watershed plan.

The Conservation Resource Alliance was established in 1968 as the Northwest Michigan Resource Conservation and Development Council, Inc., and reorganized as a 501(c)(3) nonprofit corporation in 1985. CRA is a member of the State, Regional, and National Association of Resource Conservation and Development Councils. CRA's mission is to protect, preserve, and restore northwest Michigan's truly unique watersheds, thus protecting fish and wildlife habitat for future generations. The goal is to increase local awareness of issues threatening those resources and to help foster pro-active management practices which repair problems before they become worse.

CRA has accomplished many projects thought to be beyond the scope of any one organization's abilities. The recently completed \$1.5 million Pere Marquette Watershed Restoration Project, the Big Manistee Suicide Bend Stabilization Project, and the Pine River Restoration Project are a few examples of work completed by CRA and partners. Currently, CRA coordinates erosion control and fish habitat improvement projects on seven high-profile rivers in northwest Michigan. CRA's 30-year history has focused on building long-standing and diverse partnerships to fuel on the ground projects and set goals for resource management.

The specific roles/responsibilities of the CRA and its staff relevant to the implementation of the watershed plan is outlined in Section (B) - Description of Proposed Projects.

(2) Identification, qualifications, and past experience of project's leader, staff, and other active public/private partners expected to participate in the implementation of the watershed plan.

The Little River Band of Ottawa Indians status as a federally recognized Tribe was reaffirmed on September 21, 1994. Within the Tribal Government system is the Natural Resource Conservation Department. The Department consists of a Director, six biologists, and

three technicians. The Tribe's Inland Fisheries program currently conducts stream electrofishing assessments on various tributaries within the Manistee River Watershed. The Inland Fisheries program also focuses on the Threatened lake sturgeon and with current grant funding the Tribe will continue and expand that monitoring program. These assessment sites are shared with the EPA funded (CWA sect. 106) water quality program, which includes habitat inventories, macroinvertebrate community surveys, and nutrient sampling at 17 locations throughout the watershed. These programs maintain involvement in the local watershed partnerships.

Other Departmental programs include the EPA funded General Assistance Program (GAP) which builds a framework for the Tribe to maintain and protect a quality environment. The Tribe's Wildlife program conducts numerous surveys within the Manistee River Watershed including frog and toad, waterfowl, and furbearer assessments. The Tribe has also received Circle of Flight (U.S. Dept. of Interior) grant funds to maintain, enhance, and protect area wetlands. All of these programs will work cooperatively to add expertise and direction to the Watershed Initiative.

The specific roles/responsibilities of the Tribe and its staff relevant to the implementation of the watershed plan is outlined in Section (B) - Description of Proposed Projects.

The LRBOI and CRA have maintained a productive working relationship. Cooperatively they have accomplished numerous watershed projects and have the ability to promote the proposed Watershed Initiative to many local stakeholders. Resumes and partnership agreements are attached.

(D) Description of Outreach Activities

(1) A strategy for transferring the knowledge gained from this effort to other areas.

The LRBOI will prepare a final technical report of the approach/results of the proposed watershed initiative that will be distributed to the following entities:

- Chippewa Ottawa Resource Authority
- Great Lakes Fish and Wildlife Commission
- Michigan Department of Natural Resources
- National Forest Service
- U.S. Fish and Wildlife Service

The technical report, with photographs of the proposed projects, will also be published on the Tribe's website (currently in development) at the conclusion of the project.

(2) **A description of an information and outreach component that will be used to enhance public understanding of the watershed and the goals of the watershed plan.**

Signage at all rehabilitation sites will be constructed explaining the watershed effort.

Restoration sites will be implemented only after extensive discussion with local watershed restoration committees. Local volunteers will be used to carry out various activities at watershed clean up days. These have been conducted in the past by CRA and were extremely successful. The *Tippy Dam Clean - up* focused on removing debris from anglers. The *Bear Creek Clean – up* removed large amounts of trash (tires, metal, etc.) with the help of local students.

The Tribe conducted a highly successfully *Sturgeon Youth Day* during the spring of 2002, where Conservation Department staff deployed assessment gear, captured adult lake sturgeon, and collected data. This activity provided hands-on activities designed to promote good stewardship of the lake sturgeon. This activity will be continued to encourage public involvement in natural resource management, the preservation of native fish communities, and display ongoing activities to rehabilitate lake sturgeon populations in the Manistee Watershed.

All grant activities will be presented at local restoration committee meetings (quarterly). Two large town hall type meetings will be organized by the Tribe to inform the public of the proposed activities. At the onset of the grant, a meeting will be held to explain the projects to be undertaken and the objectives. After the projects have been completed a public meeting will be held to report on the successes of the watershed initiative.